

EXHIBIT 19

Attorney Docket No.: 22501-0006RX1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors : Sullivan et al. Patent No. : 6,495,633
Control No. : 95/000,445 Art Unit : 3991
Reexam Filed: March 18, 2009 Examiner : Alan D. Diamond
Title : DUAL CORES FOR GOLF BALLS

Mail Stop "Inter Partes Reexam"

Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT IN REPLY TO ACTION OF MAY 15, 2009

Please amend the above-identified patent as follows:

CERTIFICATE OF MAILING BY EXPRESS MAIL

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the patent:

Listing of Claims:

1. (Original) A golf ball comprising:
a dual core comprising a center component, and a core layer disposed about said center component;
an inner cover layer disposed on said dual core, the inner cover layer consisting essentially of a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid, and
an outer cover layer formed about said inner cover layer, said outer cover layer comprising a low flexural modulus ionomer resin which includes a blend of a hard high modulus ionomer resin with a soft low modulus ionomer resin, the high modulus ionomer being a sodium, zinc, magnesium or lithium salt of a copolymer having from 2 to 8 carbon atoms and an unsaturated monocarboxylic acid having from 3 to 8 carbon atoms, the low modulus ionomer being a sodium or zinc salt of a terpolymer of an olefin having 2 to 8 carbon atoms, acrylic acid and an unsaturated monomer of the acrylate ester class having from 1 to 21 carbon atoms.
2. (Original) A golf ball according to claim 1, wherein said center component comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof.
3. (Original) A golf ball according to claim 1, wherein said core layer comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof.

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4. (Original) A golf ball according to claim 1, wherein the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 17% to about 25% by weight of an alpha, beta-unsaturated carboxylic acid.
5. (Original) A golf ball according to claim 1, wherein the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 18.5% to about 21.5% by weight of an alpha, beta-unsaturated carboxylic acid.
6. (Original) A golf ball according to claim 1, wherein the inner cover layer has a thickness of about 0.100 to about 0.010 inches and the outer cover layer has a thickness of about 0.010 to about 0.05 inches, the golf ball having an overall diameter of 1.680 inches or more.
7. (Original) A golf ball according to claim 1, wherein the inner cover layer has a thickness of about 0.030"-0.0375" inches and the outer cover layer has a thickness of about 0.030"-0.0375" inches, the golf ball having an overall diameter of 1.680 inches or more.
8. (Original) A golf ball according to claim 1, wherein the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin.
9. (Original) A golf ball according to claim 1, wherein the outer layer composition includes 75 to 25 percent by weight of the hard high modulus ionomer resin and about 25 to 75 percent by weight of the soft low modulus ionomer resin.
- 10-11. (Cancelled)
12. (Original) A golf ball comprising:
a dual core comprising a center component, and a core layer disposed about said center component, said core layer comprising polybutadiene;

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an inner cover layer disposed on said dual core, the inner cover layer consisting essentially of a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid; and

an outer cover layer formed about said inner cover layer, said outer cover layer comprising a relatively soft polymeric material selected from the group consisting of low flexural modulus ionomer resins and non-ionomeric elastomers.

13. (Original) A golf ball according to claim 12, wherein the non-ionomeric elastomer is a polyurethane.
14. (Original) A golf ball according to claim 12, wherein the outer layer composition includes a blend of a hard high modulus ionomer resin and a soft low modulus ionomer resin.
15. (Original) A golf ball according to claim 14, wherein the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin.
16. (New) A golf ball according to claim 1, wherein the modulus of said high acid ionomer is between 15,000 and 70,000 psi.
17. (New) A golf ball according to claim 1, wherein said inner cover layer has a thickness of 0.03 to 0.07 inches, and wherein the diameter of said golf ball is 1.68 inches.
18. (New) A golf ball according to claim 1, wherein said inner cover layer has a thickness of 0.05 to 0.1 inches, and wherein the diameter of said golf ball is 1.72 inches.
19. (New) A golf ball according to claim 1, wherein said inner cover layer of said golf ball has a Shore D hardness of 60 or more.
20. (New) A golf ball according to claim 1, wherein said inner cover layer of said golf ball has a Shore D hardness of 65 or more.

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21. (New) A golf ball according to claim 1, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 100 or less.
22. (New) A golf ball according to claim 1, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 90 or less.
23. (New) A golf ball according to claim 1, wherein said inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid.
24. (New) A golf ball according to claim 1, wherein said outer cover layer has a thickness of 0.03 to 0.06 inches, and wherein the diameter of said golf ball is 1.68 inches.
25. (New) A golf ball according to claim 1, wherein said outer cover layer has a thickness of 0.04 to 0.07 inches, and wherein the diameter of said golf ball is 1.72 inches.
26. (New) A golf ball according to claim 1, wherein said outer cover layer of said golf ball has a Shore D hardness of 55 or less.
27. (New) A golf ball according to claim 1, wherein said outer cover layer of said golf ball has a Shore D hardness of 50 or less.
28. (New) A golf ball according to claim 1, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 55.
29. (New) A golf ball according to claim 1, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 50.

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30. (New) A golf ball according to claim 1, wherein said outer cover layer comprises a blend of hard and soft ionomers in the range of about 3 to 25 percent hard ionomer and about 75 to 97 percent soft ionomer.

31. (New) A golf ball according to claim 1, wherein said dual core is a solid dual core.

32. (New) A golf ball according to claim 1, wherein said dual core has a coefficient of restitution of about 0.750 or more.

33. (New) A golf ball according to claim 1, wherein said dual core has a PGA compression of about 90 or less.

34. (New) A golf ball according to claim 1, wherein said dual core has a PGA compression of 70 or less.

35. (New) A golf ball according to claim 1, wherein said dual core weighs between 25 and 40 grams.

36. (New) A golf ball according to claim 1, wherein said dual core weighs between 30 and 40 grams.

37. (New) A golf ball according to claim 1, wherein the diameter of said center component is 0.854 inches or less.

38. (New) A golf ball according to claim 1, wherein the diameter of said center component is between 0.831 inches and 0.854 inches.

39. (New) A golf ball according to claim 1, wherein said center component has a Shore D hardness of 75 or more.

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40. (New) A golf ball according to claim 1, wherein the coefficient of restitution of said golf ball is 0.770 or more.

41. (New) A golf ball according to claim 1, wherein the coefficient of restitution of said golf ball is 0.780 or more.

42. (New) A golf ball according to claim 1, wherein said golf ball has a PGA compression of 100 or less.

43. (New) A golf ball according to claim 1, wherein said golf ball has a PGA compression of 90 or less.

44. (New) A golf ball according to claim 1, wherein said golf ball has a scuff resistance of no higher than 3.0.

45. (New) A golf ball according to claim 1, wherein said golf ball has a scuff resistance of no higher than 2.5.

46. (New) A golf ball according to claim 1, wherein said golf ball has a scuff resistance of no higher than 2.0.

47. (New) A golf ball according to claim 12, wherein the modulus of said high acid ionomer is between 15,000 and 70,000 psi.

48. (New) A golf ball according to claim 12, wherein said inner cover layer has a thickness of 0.03 to 0.07 inches, and wherein the diameter of said golf ball is 1.68 inches.

49. (New) A golf ball according to claim 12, wherein said inner cover layer has a thickness of 0.05 to 0.1 inches, and wherein the diameter of said golf ball is 1.72 inches.

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50. (New) A golf ball according to claim 12, wherein said inner cover layer of said golf ball has a Shore D hardness of 60 or more.

51. (New) A golf ball according to claim 12, wherein said inner cover layer of said golf ball has a Shore D hardness of 65 or more.

52. (New) A golf ball according to claim 12, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 100 or less.

53. (New) A golf ball according to claim 12, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 90 or less.

54. (New) A golf ball according to claim 12, wherein said inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid.

55. (New) A golf ball according to claim 12, wherein said outer cover layer comprises a polyurethane.

56. (New) A golf ball according to claim 12, wherein said outer cover layer comprises a polyester elastomer or a polyester amide.

57. (New) A golf ball according to claim 12, wherein said outer cover layer comprises a blend of two or more non-ionic elastomers.

58. (New) A golf ball according to claim 12, wherein said outer cover layer has a thickness of 0.03 to 0.06 inches, and wherein the diameter of said golf ball is 1.68 inches.

59. (New) A golf ball according to claim 12, wherein said outer cover layer has a thickness of 0.04 to 0.07 inches, and wherein the diameter of said golf ball is 1.72 inches.

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60. (New) A golf ball according to claim 12, wherein said outer cover layer of said golf ball has a Shore D hardness of 55 or less.

61. (New) A golf ball according to claim 12, wherein said outer cover layer of said golf ball has a Shore D hardness of 50 or less.

Col. 17, lines 1-3

62. (New) A golf ball according to claim 12, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 55.

63. (New) A golf ball according to claim 12, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 50.

64. (New) A golf ball according to claim 12, wherein said dual core is a solid dual core.

65. (New) A golf ball according to claim 12, wherein said dual core has a coefficient of restitution of about 0.750 or more.

66. (New) A golf ball according to claim 12, wherein said dual core has a PGA compression of about 90 or less.

67. (New) A golf ball according to claim 12, wherein said dual core has a PGA compression of 70 or less.

68. (New) A golf ball according to claim 12, wherein said dual core weighs between 25 and 40 grams.

69. (New) A golf ball according to claim 12, wherein said dual core weighs between 30 and 40 grams.

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70. (New) A golf ball according to claim 12, wherein the diameter of said center component is 0.854 inches or less.

71. (New) A golf ball according to claim 12, wherein the diameter of said center component is between 0.831 inches and 0.854 inches.

72. (New) A golf ball according to claim 12, wherein said center component has a Shore D hardness of 75 or more.

73. (New) A golf ball according to claim 12, wherein the coefficient of restitution of said golf ball is 0.770 or more.

74. (New) A golf ball according to claim 12, wherein the coefficient of restitution of said golf ball is 0.780 or more.

75. (New) A golf ball according to claim 12, wherein said golf ball has a PGA compression of 100 or less.

76. (New) A golf ball according to claim 12, wherein said golf ball has a PGA compression of 90 or less.

77. (New) A golf ball according to claim 12, wherein said golf ball has a scuff resistance of no higher than 3.0.

78. (New) A golf ball according to claim 12, wherein said golf ball has a scuff resistance of no higher than 2.5.

79. (New) A golf ball according to claim 12, wherein said golf ball has a scuff resistance of no higher than 2.0.

80. (New) A golf ball consisting of:

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a dual core consisting of a center component, and a core layer disposed about said center component;

an inner cover layer disposed on said dual core, the inner cover layer consisting essentially of a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid, and

an outer cover layer formed about said inner cover layer, said outer cover layer comprising a low flexural modulus ionomer resin which includes a blend of a hard high modulus ionomer resin with a soft low modulus ionomer resin, the high modulus ionomer being a sodium, zinc, magnesium or lithium salt of a copolymer having from 2 to 8 carbon atoms and an unsaturated monocarboxylic acid having from 3 to 8 carbon atoms, the low modulus ionomer being a sodium or zinc salt of a terpolymer of an olefin having 2 to 8 carbon atoms, acrylic acid and an unsaturated monomer of the acrylate ester class having from 1 to 21 carbon atoms.

81. (New) A golf ball according to claim 80, wherein said center component comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof.

82. (New) A golf ball according to claim 80, wherein said core layer comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof.

83. (New) A golf ball according to claim 80, wherein the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 17% to about 25% by weight of an alpha, beta-unsaturated carboxylic acid.

84. (New) A golf ball according to claim 80, wherein the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 18.5% to about 21.5% by weight of an alpha, beta-unsaturated carboxylic acid.

85. (New) A golf ball according to claim 80, wherein the inner cover layer has a

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thickness of about 0.100 to about 0.010 inches and the outer cover layer has a thickness of about 0.010 to about 0.05 inches, the golf ball having an overall diameter of 1.680 inches or more.

86. (New) A golf ball according to claim 80, wherein the inner cover layer has a thickness of about 0.030-0.0375 inches and the outer cover layer has a thickness of about 0.030-0.0375 inches, the golf ball having an overall diameter of 1.680 inches or more.

87. (New) A golf ball according to claim 80, wherein the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin.

88. (New) A golf ball according to claim 80, wherein the outer layer composition includes 75 to 25 percent by weight of the hard high modulus ionomer resin and about 25 to 75 percent by weight of the soft low modulus ionomer resin.

89. (New) A golf ball according to claim 80, wherein the modulus of said high acid ionomer is between 15,000 and 70,000 psi.

90. (New) A golf ball according to claim 80, wherein said inner cover layer has a thickness of 0.03 to 0.07 inches, and wherein the diameter of said golf ball is 1.68 inches.

91. (New) A golf ball according to claim 80, wherein said inner cover layer has a thickness of 0.05 to 0.1 inches, and wherein the diameter of said golf ball is 1.72 inches.

92. (New) A golf ball according to claim 80, wherein said inner cover layer of said golf ball has a Shore D hardness of 60 or more.

93. (New) A golf ball according to claim 80, wherein said inner cover layer of said golf ball has a Shore D hardness of 65 or more.

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94. (New) A golf ball according to claim 80, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 100 or less.

95. (New) A golf ball according to claim 80, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 90 or less.

96. (New) A golf ball according to claim 80, wherein said inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid.

97. (New) A golf ball according to claim 80, wherein said outer cover layer has a thickness of 0.03 to 0.06 inches, and wherein the diameter of said golf ball is 1.68 inches.

98. (New) A golf ball according to claim 80, wherein said outer cover layer has a thickness of 0.04 to 0.07 inches, and wherein the diameter of said golf ball is 1.72 inches.

99. (New) A golf ball according to claim 80, wherein said outer cover layer of said golf ball has a Shore D hardness of 55 or less.

100. (New) A golf ball according to claim 80, wherein said outer cover layer of said golf ball has a Shore D hardness of 50 or less.

101. (New) A golf ball according to claim 80, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 55.

102. (New) A golf ball according to claim 80, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 50.

103. (New) A golf ball according to claim 80, wherein said outer cover layer comprises a blend of hard and soft ionomers in the range of about 3 to 25 percent hard ionomer and about 75 to 97 percent soft ionomer.

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104. (New) A golf ball according to claim 80, wherein said dual core is a solid dual core.

105. (New) A golf ball according to claim 80, wherein said dual core has a coefficient of restitution of about 0.750 or more.

106. (New) A golf ball according to claim 80, wherein said dual core has a PGA compression of about 90 or less.

107. (New) A golf ball according to claim 80, wherein said dual core has a PGA compression of 70 or less.

108. (New) A golf ball according to claim 80, wherein said dual core weighs between 25 and 40 grams.

109. (New) A golf ball according to claim 80, wherein said dual core weighs between 30 and 40 grams.

110. (New) A golf ball according to claim 80, wherein the diameter of said center component is 0.854 inches or less.

111. (New) A golf ball according to claim 80, wherein the diameter of said center component is between 0.831 inches and 0.854 inches.

112. (New) A golf ball according to claim 80, wherein said center component has a Shore D hardness of 75 or more.

113. (New) A golf ball according to claim 80, wherein the coefficient of restitution of said golf ball is 0.770 or more.

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114. (New) A golf ball according to claim 80, wherein the coefficient of restitution of said golf ball is 0.780 or more.

115. (New) A golf ball according to claim 80, wherein said golf ball has a PGA compression of 100 or less.

116. (New) A golf ball according to claim 80, wherein said golf ball has a PGA compression of 90 or less.

117. (New) A golf ball according to claim 80, wherein said golf ball has a scuff resistance of no higher than 3.0.

118. (New) A golf ball according to claim 80, wherein said golf ball has a scuff resistance of no higher than 2.5.

119. (New) A golf ball according to claim 80, wherein said golf ball has a scuff resistance of no higher than 2.0.

120. (New) A golf ball consisting of:

a dual core consisting of a center component, and a core layer disposed about said center component, said core layer comprising polybutadiene;

an inner cover layer disposed on said dual core, the inner cover layer consisting essentially of a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid; and

an outer cover layer formed about said inner cover layer, said outer cover layer comprising a relatively soft polymeric material selected from the group consisting of low flexural modulus ionomer resins and non-ionomeric elastomers.

121. (New) A golf ball according to claim 120, wherein the non-ionomeric elastomer is a polyurethane.

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122. (New) A golf ball according to claim 120, wherein the outer layer composition includes a blend of a hard high modulus ionomer resin and a soft low modulus ionomer resin.

123. (New) A golf ball according to claim 122, wherein the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin.

124. (New) A golf ball according to claim 120, wherein the modulus of said high acid ionomer is between 15,000 and 70,000 psi.

125. (New) A golf ball according to claim 120, wherein said inner cover layer has a thickness of 0.03 to 0.07 inches, and wherein the diameter of said golf ball is 1.68 inches.

126. (New) A golf ball according to claim 120, wherein said inner cover layer has a thickness of 0.05 to 0.1 inches, and wherein the diameter of said golf ball is 1.72 inches.

127. (New) A golf ball according to claim 120, wherein said inner cover layer of said golf ball has a Shore D hardness of 60 or more.

128. (New) A golf ball according to claim 120, wherein said inner cover layer of said golf ball has a Shore D hardness of 65 or more.

129. (New) A golf ball according to claim 120, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 100 or less.

130. (New) A golf ball according to claim 120, wherein said dual core and said inner cover layer form an inner ball having a PGA compression of 90 or less.

131. (New) A golf ball according to claim 120, wherein said inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid.

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132. (New) A golf ball according to claim 120, wherein said outer cover layer comprises a polyurethane.

133. (New) A golf ball according to claim 120, wherein said outer cover layer comprises a polyester elastomer or a polyester amide.

134. (New) A golf ball according to claim 120, wherein said outer cover layer comprises a blend of two or more non-ionomeric elastomers.

135. (New) A golf ball according to claim 120, wherein said outer cover layer has a thickness of 0.03 to 0.06 inches, and wherein the diameter of said golf ball is 1.68 inches.

136. (New) A golf ball according to claim 120, wherein said outer cover layer has a thickness of 0.04 to 0.07 inches, and wherein the diameter of said golf ball is 1.72 inches.

137. (New) A golf ball according to claim 120, wherein said outer cover layer of said golf ball has a Shore D hardness of 55 or less.

138. (New) A golf ball according to claim 120, wherein said outer cover layer of said golf ball has a Shore D hardness of 50 or less.

139. (New) A golf ball according to claim 120, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 55.

140. (New) A golf ball according to claim 120, wherein said outer cover layer of said golf ball has a Shore D hardness of 40 to 50.

141. (New) A golf ball according to claim 120, wherein said dual core is a solid dual core.

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142. (New) A golf ball according to claim 120, wherein said dual core has a coefficient of restitution of about 0.750 or more.

143. (New) A golf ball according to claim 120, wherein said dual core has a PGA compression of about 90 or less.

144. (New) A golf ball according to claim 120, wherein said dual core has a PGA compression of 70 or less.

145. (New) A golf ball according to claim 120, wherein said dual core weighs between 25 and 40 grams.

146. (New) A golf ball according to claim 120, wherein said dual core weighs between 30 and 40 grams.

147. (New) A golf ball according to claim 120, wherein the diameter of said center component is 0.854 inches or less.

148. (New) A golf ball according to claim 120, wherein the diameter of said center component is between 0.831 inches and 0.854 inches.

149. (New) A golf ball according to claim 120, wherein said center component has a Shore D hardness of 75 or more.

150. (New) A golf ball according to claim 120, wherein the coefficient of restitution of said golf ball is 0.770 or more.

151. (New) A golf ball according to claim 120, wherein the coefficient of restitution of said golf ball is 0.780 or more.

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152. (New) A golf ball according to claim 120, wherein said golf ball has a PGA compression of 100 or less.

153. (New) A golf ball according to claim 120, wherein said golf ball has a PGA compression of 90 or less.

154. (New) A golf ball according to claim 120, wherein said golf ball has a scuff resistance of no higher than 3.0.

155. (New) A golf ball according to claim 120, wherein said golf ball has a scuff resistance of no higher than 2.5.

156. (New) A golf ball according to claim 120, wherein said golf ball has a scuff resistance of no higher than 2.0.

157. (New) A golf ball consisting of:
a solid dual core consisting of a center component, and a core layer disposed about said center component, said core layer comprising polybutadiene;
an inner cover layer disposed on said dual core, the inner cover layer consisting essentially of a high acid ionomer including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid; and
an outer cover layer formed about said inner cover layer, said outer cover layer comprising a relatively soft polymeric material, wherein said relatively soft polymeric material is polyurethane.

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REMARKS

Claims 10 and 11 have been cancelled herein without prejudice. In addition, new claims 16-157 have been added, including new independent claims 80, 120, and 157. Thus, claims 1-9 and 12-157 are pending. Written description support for new claims 16-157 is found throughout the original specification, as described below. Additional written description support can be found throughout one or more of the priority applications. Thus, no new matter has been added.

None of the new claims broadens the claim scope beyond the original patent claims. For example, new claims 16-46 depend directly from original claim 1, and new claims 47-79 depend directly from original claim 12. New independent claims 80 and 120 are identical to original claims 1 and 12, respectively, with the exception that the first two recitations of the transitional phrase "comprising" in each claim were replaced with "consisting of" to limit the recited golf balls to four-piece golf balls that are clearly patentable over the cited references. New claims 81-119 depend directly from claim 80, and new claims 121-156 depend directly or indirectly from claim 120. New independent claim 157 is identical to claim 120 with the exception that claim 157 recites a solid duel core and recites that the relatively soft polymeric material is polyurethane. Thus, each new claim includes all of the elements from original patent claim 1 or 12, and therefore is not broader than original patent claim 1 or 12. The patentability of these new claims is described in more detail below.

The Patent Owner invites suggestions from the Examiner in the event that any issue would delay confirming patentability of one or more of the pending claims.

EXPLANATION OF SUPPORT FOR THE PENDING CLAIMS

In accordance with MPEP § 2666.01 and 37 C.F.R. § 1.530(e), Patent Owner submits the following explanation of support for the pending claims. Although the citations below are directed to the illustrative teachings found in the issued patent document, it should be understood that additional written description support can be found throughout one or more of the priority applications.

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Claims 1-15

- Claims 1-9 and 12-15 are retained in their original form (no amendments).
- Original patent claims 10 and 11 have been canceled herein without prejudice.

Claims 16-46

- Dependent claim 16 depends from original claim 1 and recites that the modulus of the high acid ionomer is between 15,000 and 70,000 psi. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 3, lines 62-65.
- Dependent claim 17 depends from original claim 1 and recites that the inner cover layer has a thickness of 0.03 to 0.07 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 18 depends from original claim 1 and recites that the inner cover layer has a thickness of 0.05 to 0.1 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 19 depends from original claim 1 and recites that the inner cover layer of the golf ball has a Shore D hardness of 60 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 23-24.
- Dependent claim 20 depends from original claim 1 and recites that the inner cover layer of the golf ball has a Shore D hardness of 65 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 24-26.
- Dependent claim 21 depends from original claim 1 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 26-28.
- Dependent claim 22 depends from original claim 1 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 28-30.
- Dependent claim 23 depends from original claim 1 and recites that the inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 6, lines 44-47.
- Dependent claim 24 depends from original claim 1 and recites that the outer cover layer has a thickness of 0.03 to 0.06 inches, and that the diameter of the golf ball is 1.68 inches.

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Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.

- Dependent claim 25 depends from original claim 1 and recites that the outer cover layer has a thickness of 0.04 to 0.07 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 26 depends from original claim 1 and recites that the outer cover layer of the golf ball has a Shore D hardness of 55 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 27 depends from original claim 1 and recites that the outer cover layer of the golf ball has a Shore D hardness of 50 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 28 depends from original claim 1 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 55. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 46-47.
- Dependent claim 29 depends from original claim 1 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 50. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 47-50.
- Dependent claim 30 depends from original claim 1 and recites that the outer cover layer comprises a blend of hard and soft ionomers in the range of about 3 to 25 percent hard ionomer and about 75 to 97 percent soft ionomer. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 23, lines 52-56.
- Dependent claim 31 depends from original claim 1 and recites that the dual core is a solid dual core. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 30, lines 12-15.
- Dependent claim 32 depends from original claim 1 and recites that the dual core has a coefficient of restitution of about 0.750 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 33 depends from original claim 1 and recites that the dual core has a PGA compression of about 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 34 depends from original claim 1 and recites that the dual core has a PGA compression of 70 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.

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- Dependent claim 35 depends from original claim 1 and recites that the dual core weighs between 25 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 36 depends from original claim 1 and recites that the dual core weighs between 30 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 37 depends from original claim 1 and recites that the diameter of the center component is 0.854 inches or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 38 depends from original claim 1 and recites that the diameter of the center component is between 0.831 inches and 0.854 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 39 depends from original claim 1 and recites that the center component has a Shore D hardness of 75 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 40 depends from original claim 1 and recites that the coefficient of restitution of the golf ball is 0.770 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 41 depends from original claim 1 and recites that the coefficient of restitution of the golf ball is 0.780 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 42 depends from original claim 1 and recites that the golf ball has a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 43 depends from original claim 1 and recites that the golf ball has a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 44 depends from original claim 1 and recites that the golf ball has a scuff resistance of no higher than 3.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 45-47.
- Dependent claim 45 depends from original claim 1 and recites that the golf ball has a scuff resistance of no higher than 2.5. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 47-51.
- Dependent claim 46 depends from original claim 1 and recites that the golf ball has a scuff resistance of no higher than 2.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 52-54.

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Claims 47-79

- Dependent claim 47 depends from original claim 12 and recites that the modulus of said high acid ionomer is between 15,000 and 70,000 psi. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 3, lines 62-65.
- Dependent claim 48 depends from original claim 12 and recites that the inner cover layer has a thickness of 0.03 to 0.07 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 49 depends from original claim 12 and recites that the inner cover layer has a thickness of 0.05 to 0.1 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 50 depends from original claim 12 and recites that the inner cover layer of the golf ball has a Shore D hardness of 60 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 23-24.
- Dependent claim 51 depends from original claim 12 and recites that the inner cover layer of the golf ball has a Shore D hardness of 65 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 24-26.
- Dependent claim 52 depends from original claim 12 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 26-28.
- Dependent claim 53 depends from original claim 12 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 28-30.
- Dependent claim 54 depends from original claim 12 and recites that the inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 6, lines 44-47.
- Dependent claim 55 depends from original claim 12 and recites that the outer cover layer comprises a polyurethane. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, line 55; Col. 25, lines 10-11.
- Dependent claim 56 depends from original claim 12 and recites that the outer cover layer comprises a polyester elastomer or a polyester amide. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 55-58.

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- Dependent claim 57 depends from original claim 12 and recites that the outer cover layer comprises a blend of two or more non-ionic elastomers. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 58-60.
- Dependent claim 58 depends from original claim 12 and recites that the outer cover layer has a thickness of 0.03 to 0.06 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 59 depends from original claim 12 and recites that the outer cover layer has a thickness of 0.04 to 0.07 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 60 depends from original claim 12 and recites that the outer cover layer of the golf ball has a Shore D hardness of 55 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 61 depends from original claim 12 and recites that the outer cover layer of the golf ball has a Shore D hardness of 50 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 62 depends from original claim 12 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 55. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 46-47.
- Dependent claim 63 depends from original claim 12 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 50. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 47-50.
- Dependent claim 64 depends from original claim 12 and recites that the dual core is a solid dual core. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 30, lines 12-15.
- Dependent claim 65 depends from original claim 12 and recites that the dual core has a coefficient of restitution of about 0.750 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 66 depends from original claim 12 and recites that the dual core has a PGA compression of about 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 67 depends from original claim 12 and recites that the dual core has a PGA compression of 70 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.

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- Dependent claim 68 depends from original claim 12 and recites that the dual core weighs between 25 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 69 depends from original claim 12 and recites that the dual core weighs between 30 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 70 depends from original claim 12 and recites that the diameter of the center component is 0.854 inches or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 71 depends from original claim 12 and recites that the diameter of the center component is between 0.831 inches and 0.854 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 72 depends from original claim 12 and recites that the center component has a Shore D hardness of 75 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 73 depends from original claim 12 and recites that the coefficient of restitution of the golf ball is 0.770 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 74 depends from original claim 12 and recites that the coefficient of restitution of the golf ball is 0.780 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 75 depends from original claim 12 and recites that the golf ball has a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 76 depends from original claim 12 and recites that the golf ball has a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 77 depends from original claim 12 and recites that the golf ball has a scuff resistance of no higher than 3.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 45-47.
- Dependent claim 78 depends from original claim 12 and recites that the golf ball has a scuff resistance of no higher than 2.5. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 47-51.
- Dependent claim 79 depends from original claim 12 and recites that the golf ball has a scuff resistance of no higher than 2.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 52-54.

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Claims 80-119

- Claim 80 is identical to original claim 1, with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf ball to a four-piece golf ball. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 1 and Col. 6, lines 16-23.
- Dependent claim 81 depends from claim 80 and recites that the center component comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 2.
- Dependent claim 82 depends from claim 80 and recites that the core layer comprises a material selected from the group consisting of thermosets, thermoplastics, and combinations thereof. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 3.
- Dependent claim 83 depends from claim 80 and recites that the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 17% to about 25% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 4.
- Dependent claim 84 depends from claim 80 and recites that the inner cover layer comprises a high acid ionomer resin comprising a copolymer of about 18.5% to about 21.5% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 5.
- Dependent claim 85 depends from claim 80 and recites that the inner cover layer has a thickness of about 0.100 to about 0.010 inches and the outer cover layer has a thickness of about 0.010 to about 0.05 inches, the golf ball having an overall diameter of 1.680 inches or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 6.
- Dependent claim 86 depends from claim 80 and recites that the inner cover layer has a thickness of about 0.030-0.0375 inches and the outer cover layer has a thickness of about 0.030-0.0375 inches, the golf ball having an overall diameter of 1.680 inches or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 7.
- Dependent claim 87 depends from claim 80 and recites that the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 8.
- Dependent claim 88 depends from claim 80 and recites that the outer layer composition includes 75 to 25 percent by weight of the hard high modulus ionomer resin and about 25

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to 75 percent by weight of the soft low modulus ionomer resin. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 9.

- Dependent claim 89 depends from claim 80 and recites that the modulus of said high acid ionomer is between 15,000 and 70,000 psi. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 3, lines 62-65.
- Dependent claim 90 depends from claim 80 and recites that the inner cover layer has a thickness of 0.03 to 0.07 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 91 depends from claim 80 and recites that the inner cover layer has a thickness of 0.05 to 0.1 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 92 depends from claim 80 and recites that the inner cover layer of the golf ball has a Shore D hardness of 60 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 23-24.
- Dependent claim 93 depends from claim 80 and recites that the inner cover layer of the golf ball has a Shore D hardness of 65 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 24-26.
- Dependent claim 94 depends from claim 80 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 26-28.
- Dependent claim 95 depends from claim 80 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 28-30.
- Dependent claim 96 depends from claim 80 and recites that the inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 6, lines 44-47.
- Dependent claim 97 depends from claim 80 and recites that the outer cover layer has a thickness of 0.03 to 0.06 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 98 depends from claim 80 and recites that the outer cover layer has a thickness of 0.04 to 0.07 inches, and that the diameter of the golf ball is 1.72 inches.

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Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.

- Dependent claim 99 depends from claim 80 and recites that the outer cover layer of said golf ball has a Shore D hardness of 55 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 100 depends from claim 80 and recites that the outer cover layer of the golf ball has a Shore D hardness of 50 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 101 depends from claim 80 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 55. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 46-47.
- Dependent claim 102 depends from claim 80 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 50. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 47-50.
- Dependent claim 103 depends from claim 80 and recites that the outer cover layer comprises a blend of hard and soft ionomers in the range of about 3 to 25 percent hard ionomer and about 75 to 97 percent soft ionomer. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 23, lines 52-56.
- Dependent claim 104 depends from claim 80 and recites that the dual core is a solid dual core. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 30, lines 12-15.
- Dependent claim 105 depends from claim 80 and recites that the dual core has a coefficient of restitution of about 0.750 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 106 depends from claim 80 and recites that the dual core has a PGA compression of about 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 107 depends from claim 80 and recites that the dual core has a PGA compression of 70 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 108 depends from claim 80 and recites that the dual core weighs between 25 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 109 depends from claim 80 and recites that the dual core weighs between 30 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.

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- Dependent claim 110 depends from claim 80 and recites that the diameter of the center component is 0.854 inches or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 111 depends from claim 80 and recites that the diameter of the center component is between 0.831 inches and 0.854 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 112 depends from claim 80 and recites that the center component has a Shore D hardness of 75 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 113 depends from claim 80 and recites that the coefficient of restitution of said golf ball is 0.770 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 114 depends from claim 80 and recites that the coefficient of restitution of said golf ball is 0.780 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 115 depends from claim 80 and recites that the golf ball has a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 116 depends from claim 80 and recites that the golf ball has a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 117 depends from claim 80 and recites that the golf ball has a scuff resistance of no higher than 3.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 45-47.
- Dependent claim 118 depends from claim 80 and recites that the golf ball has a scuff resistance of no higher than 2.5. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 47-51.
- Dependent claim 119 depends from claim 80 and recites that the golf ball has a scuff resistance of no higher than 2.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 52-54.

Claims 120-156

- Claim 120 is identical to original claim 12, with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf ball to a four-piece golf ball. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 12 and Col. 6, lines 16-23.

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- Dependent claim 121 depends from claim 120 and recites that the non-ionomeric elastomer is a polyurethane. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 13.
- Dependent claim 122 depends from claim 120 and recites that the outer layer composition includes a blend of a hard high modulus ionomer resin and a soft low modulus ionomer resin. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 14.
- Dependent claim 123 depends from claim 122 and recites that the outer layer composition includes 90 to 10 percent by weight of the hard high modulus ionomer resin and about 10 to 90 percent by weight of the soft low modulus ionomer resin. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 15.
- Dependent claim 124 depends from claim 120 and recites that the modulus of the high acid ionomer is between 15,000 and 70,000 psi. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 3, lines 62-65.
- Dependent claim 125 depends from claim 120 and recites that the inner cover layer has a thickness of 0.03 to 0.07 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 126 depends from claim 120 and recites that the inner cover layer has a thickness of 0.05 to 0.1 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 15-18.
- Dependent claim 127 depends from claim 120 and recites that the inner cover layer of the golf ball has a Shore D hardness of 60 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 23-24.
- Dependent claim 128 depends from claim 120 and recites that the inner cover layer of the golf ball has a Shore D hardness of 65 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 24-26.
- Dependent claim 129 depends from claim 120 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 26-28.
- Dependent claim 130 depends from claim 120 and recites that the dual core and the inner cover layer form an inner ball having a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 8, lines 28-30.

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- Dependent claim 131 depends from claim 120 and recites that the inner cover layer is a blend of two or more of high acid ionomers including at least 16% by weight of an alpha, beta-unsaturated carboxylic acid. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 6, lines 44-47.
- Dependent claim 132 depends from claim 120 and recites that the outer cover layer comprises a polyurethane. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, line 55 and Col. 25, lines 10-11.
- Dependent claim 133 depends from claim 120 and recites that the outer cover layer comprises a polyester elastomer or a polyester amide. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 55-58.
- Dependent claim 134 depends from claim 120 and recites that the outer cover layer comprises a blend of two or more non-ionomeric elastomers. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 58-60.
- Dependent claim 135 depends from claim 120 and recites that the outer cover layer has a thickness of 0.03 to 0.06 inches, and that the diameter of the golf ball is 1.68 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 136 depends from claim 120 and recites that the outer cover layer has a thickness of 0.04 to 0.07 inches, and that the diameter of the golf ball is 1.72 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 16, lines 61-67.
- Dependent claim 137 depends from claim 120 and recites that the outer cover layer of the golf ball has a Shore D hardness of 55 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 138 depends from claim 120 and recites that the outer cover layer of the golf ball has a Shore D hardness of 50 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 1-3.
- Dependent claim 139 depends from claim 120 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 55. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 46-47.
- Dependent claim 140 depends from claim 120 and recites that the outer cover layer of the golf ball has a Shore D hardness of 40 to 50. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 47-50.
- Dependent claim 141 depends from claim 120 and recites that the dual core is a solid dual core. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 30, lines 12-15.

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- Dependent claim 142 depends from claim 120 and recites that the dual core has a coefficient of restitution of about 0.750 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 143 depends from claim 120 and recites that the dual core has a PGA compression of about 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 144 depends from claim 120 and recites that the dual core has a PGA compression of 70 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 52-55.
- Dependent claim 145 depends from claim 120 and recites that the dual core weighs between 25 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 146 depends from claim 120 and recites that the dual core weighs between 30 and 40 grams. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 29, lines 55-56.
- Dependent claim 147 depends from claim 120 and recites that the diameter of the center component is 0.854 inches or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 148 depends from claim 120 and recites that the diameter of the center component is between 0.831 inches and 0.854 inches. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 149 depends from claim 120 and recites that the center component has a Shore D hardness of 75 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Table 14.
- Dependent claim 150 depends from claim 120 and recites that the coefficient of restitution of the golf ball is 0.770 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 151 depends from claim 120 and recites that the coefficient of restitution of the golf ball is 0.780 or more. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 51-54.
- Dependent claim 152 depends from claim 120 and recites that the golf ball has a PGA compression of 100 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.
- Dependent claim 153 depends from claim 120 and recites that the golf ball has a PGA compression of 90 or less. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 17, lines 56-57.

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- Dependent claim 154 depends from claim 120 and recites that the golf ball has a scuff resistance of no higher than 3.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 45-47.
- Dependent claim 155 depends from claim 120 and recites that the golf ball has a scuff resistance of no higher than 2.5. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 47-51.
- Dependent claim 156 depends from claim 120 and recites that the golf ball has a scuff resistance of no higher than 2.0. Written description support for this claim can be found throughout the original patent disclosure, for example, at Col. 18, lines 52-54.

Claim 157

- Claim 157 is identical to new claim 120, the exception that claim 157 recites a solid duel core and recites that the relatively soft polymeric material is polyurethane. Written description support for this claim can be found throughout the original patent disclosure, for example, at original issued claim 12; Col. 6, lines 16-23; Col. 30, lines 12-15; Col. 16, line 55; and Col. 25, lines 10-11.

PATENTABILITY OF PENDING CLAIMS

Like the Examiner, Patent Owner will start with a discussion of the cited Cavallaro *et al.* reference as applied to claim 12 and its dependent claims. Then, Patent Owner will continue discussing the patentability of claim 12, its dependent claims including new claims 47-79, and new claims 120-157, before switching to a discussion of claim 1, its dependent claims including new claims 16-46, and new claims 80-119.

Patent Owner will not discuss the patentability of issued claims 10 and 11 since those claims have been cancelled herein without prejudice.

To be consistent with the Examiner, Patent Owner uses the following abbreviations for the cited references:

“Cavallaro” - U.S. Patent No. 5,688,191

“Sullivan” - U.S. Patent No. 4,884,814

“Proudfit” - U.S. Patent No. 5,314,187

“Kim” - U. S. Patent No. 5,184,828

“Nesbitt” - U.S. Patent No. 4,431,193

“Horiuchi” - U.S. Patent No. 5,222,739

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"Statz" - Science and Golf: Proceedings of the World Scientific Congress of Golf, 1994, pp. 205-212.

"Research Disclosure" - E.I. DuPont de Nemours & Co., Research Disclosure No. 297003, January 1989.

I. Claims 12-15, 47-79, and 121-157

A. Claims 12 and 13 are Patentable over Cavallaro

The Examiner rejected claims 12 and 13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cavallaro.

The Cavallaro reference does not render claims 12 and 13 obvious. Independent claim 12 recites a golf ball that must have a dual core in combination with an inner cover layer and an outer cover layer. The dual core must have a core layer comprising polybutadiene disposed about a center component, and the outer cover layer must comprise a relatively soft polymeric material. At no point does Cavallaro teach, suggest, or provide any rationale for making such a golf ball. In fact, Cavallaro fails to provide any teaching, suggestion, or rationale that a person having ordinary skill in the art should make the recited dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer. This is particularly true given that the section of Cavallaro that discloses the materials for inner and outer cover layers discloses various materials without any indication of the relative hardness between the inner and outer cover layers when placed over the presently claimed dual core. For example, Cavallaro specifically states that the "inner layer of the cover is either a thermoplastic material such as a thermoplastic elastomer or a thermoplastic rubber, or a thermoset rubber or thermoset elastomer material" and that the "outer layer of the cover is either a thermoplastic plastic material such as an elastomer or a thermoplastic rubber, or a thermosetting material."¹ According to Cavallaro, examples of materials suitable for use as the inner cover layer include polyether or polyester thermoplastic urethanes as well as thermoset polyurethanes.² Likewise, suitable materials for the outer layer include urethanes, ionomers with a low modulus, and other "dead" but durable

¹ Col. 6, lines 51-54 and lines 60-63 of Cavallaro.

² Col. 6, lines 54-57 of Cavallaro.

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materials such as EPDM and butyl rubber.³ This disclosure falls far short of teaching, suggesting, or providing any rationale that would lead a person having ordinary skill in the art reading Cavallaro to make the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer.

Moreover, a person having ordinary skill in the art reading Cavallaro would have been advised that there is no need to modify the cover layers taught by Cavallaro to improve the playing characteristics or "feel" of Cavallaro's golf balls. This is because Cavallaro specifically discloses that Cavallaro's invention is directed to multi-layer golf balls that already provide the "click and feel" of a conventional wound ball (e.g., a conventional balata-covered wound ball).⁴ In fact, Cavallaro also states that:

it is preferable that the golf balls of the present invention have a mantle layer with a flexural modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention. Likewise, it is preferred that the mantle layer have a tensile modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention.^[5]

Thus, a skilled artisan reading Cavallaro would have been advised that the flexural modulus and tensile modulus of a mantle layer, as opposed to a cover layer, are important properties needed to impart a softer "feel" to Cavallaro's golf balls. This conclusion is supported by the fact that Cavallaro only tested two golf balls having Cavallaro's mantle layer, both of which have a softer "feel" and both of which have a conventional single cover layer of Li/Na Surlyn® over the mantle layer.⁶ This means that a single cover layer of Li/Na Surlyn® over Cavallaro's mantle layer is all that is needed to make a golf ball having the desired softer "feel."

For these reasons alone, the Cavallaro reference does not render claim 12 obvious.

According to the Examiner, Cavallaro, by discussing the prior art, somehow teaches a golf ball having a dual core with a core layer comprising polybutadiene disposed about a center component. This is not true. Cavallaro generally discloses golf balls having a core, a

³ Col. 6, lines 63-65 of Cavallaro.

⁴ Col. 3, lines 32-36 of Cavallaro.

⁵ Col. 8, lines 11-19 of Cavallaro.

⁶ Col. 9, lines 61-67 and Tables 2 and 3 of Cavallaro. Cavallaro uses spin rate as an indicator of "feel" when comparing Cavallaro's two golf balls to two control golf balls.

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cover layer, and a mantle layer located between the core and cover layer. While the primary focus of Cavallaro is this mantle layer, Cavallaro nevertheless describes several golf ball configurations and provides a thorough list of materials for each component that purportedly has the properties that result in optimum performance for the Cavallaro golf balls. In fact, column 3, lines 56-62 of Cavallaro states:

The present invention is still further directed to a multi-layer golf ball which comprises a core, at least one cover layer and at least one mantle layer disposed between the core and cover layer wherein properties such as the thickness, hardness, flexural modulus, tensile modulus or Bayshore resilience of the various layers is such as to provide a ball with optimum performance characteristics.

This is in contrast to the multilayer golf balls of the prior art patents discussed in columns 2 and 3 of Cavallaro, none of which, according to Cavallaro, discloses a multi-layer ball having the materials and material property requirements to provide the improved golf balls of Cavallaro.⁷ Thus, a person having ordinary skill in the art reading the Cavallaro reference as a whole would have appreciated that Cavallaro not only provides an extensive list of materials for the disclosed configurations, but also teaches which materials and material property requirements fail to provide a golf ball with optimum performance characteristics. Therefore, the Examiner's reliance on the prior art section of Cavallaro in this regard is improper.

Accordingly, the Patent Owner respectfully submits that independent claim 12 is patentable over Cavallaro. Dependent claim 13 is patentable for at least the same reasons as claim 12 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 12 and 13 is respectfully requested.

B. Claims 14 and 15 are Patentable over the Combination of Cavallaro and Sullivan

The Examiner rejected claims 14 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Cavallaro in combination with Sullivan.

⁷ Col. 3, lines 26-29 of Cavallaro.

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As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 14 and 15 are patentable for at least the same reasons as claim 12. In addition, a person having ordinary skill in the art reading Cavallaro and Sullivan would have no reason to or rationale for making the presently claimed golf balls for several reasons.

First, Cavallaro already purports to provide golf balls with optimum performance characteristics including the "click and feel" of a conventional wound ball and the distance, durability, and relative ease of manufacturing of conventional two piece balls.⁸ Thus, there is no apparent need to modify Cavallaro's golf balls by looking to Sullivan.

Second, while Cavallaro discloses that any number of a wide variety of cover materials including balata and Surlyn® can be used in a Cavallaro golf ball,⁹ it is the core and mantle layer properties that are specifically discussed as affecting play characteristics such as spin, initial velocity, and feel.¹⁰ For example, column 8, lines 11-17 states that:

it is preferable that the golf balls of the present invention have a mantle layer with a flexural modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention. Likewise, it is preferred that the mantle layer have a tensile modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention.

Thus, a person having ordinary skill in the art reading Cavallaro would have been advised that Cavallaro's mantle layer is a golf ball component that is much more important for obtaining an optimal golf ball than is the cover, especially since various covers from balata to Surlyn® can be used. This is confirmed by the fact that Cavallaro only tested two golf balls having Cavallaro's mantle layer, both of which have a softer "feel" and both of which have a conventional single cover layer of Li/Na Surlyn® over the mantle layer.¹¹ Given that the cover material of Cavallaro's golf balls is largely irrelevant and, as indicated above, Cavallaro already provides golf balls with optimum performance characteristics, there is no logical basis for substituting Sullivan's cover for Cavallaro's cover.

⁸ Col. 3, lines 32-36 and lines 56-62 of Cavallaro.

⁹ Col. 5, line 67 to Col. 6, line 48 of Cavallaro.

¹⁰ Col. 7, line 29 to Col. 8, line 32 of Cavallaro.

¹¹ Col. 9, lines 61-67 and Tables 2 and 3 of Cavallaro.

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Third, assuming for the sake of argument (and despite the lack of evidence supporting any such assumption) that one would have been motivated to substitute Sullivan's cover for Cavallaro's cover, such a substitution would not have resulted in the presently claimed golf balls. Claim 12 recites a golf ball that must have a dual core in combination with an inner cover layer and an outer cover layer. Sullivan discloses mixing hard and soft ionomers to obtain a single-layer golf ball cover, but at no point does Sullivan disclose a cover having an inner cover layer and an outer cover layer. Sullivan simply discloses using a mixture of hard and soft ionomers as the sole cover of a golf ball. Thus, combining the Cavallaro and Sullivan references does not result in the presently claimed golf balls. Claim 12 also recites that the outer cover layer must comprise a relatively soft polymeric material. Like Cavallaro, at no point does Sullivan teach, suggest, or provide any rationale for making such a golf ball. In fact, both Sullivan and Cavallaro fail to provide any teaching, suggestion, or rationale that a person having ordinary skill in the art should make the recited dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer. This is particularly true given that Sullivan is directed to a *single* golf ball cover and the section of Cavallaro that discloses the materials for inner and outer cover layers discloses various materials without any indication of the relative hardness between the inner and outer cover layers when placed over the presently claimed dual core.

Accordingly, the Patent Owner respectfully submits that dependent claims 14 and 15 are patentable over Cavallaro. Prompt confirmation of patentability of claims 14 and 15 is respectfully requested.

C. New Claims 47-79 are Patentable Over Cavallaro Alone and Cavallaro in Combination with Sullivan

1. Claim 47

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claim 47 is patentable for at least the same reasons as claim 12. In addition, claim 47 recites that the modulus of the high acid ionomer of the inner cover layer is between 15,000 and 70,000 psi. At no point does Cavallaro or the combination of Cavallaro and Sullivan teach, suggest, or provide any rationale that a person having ordinary skill in the art should make the presently claimed dual-core golf ball having an outer cover

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layer formed about an inner cover layer consisting essentially of a high acid ionomer having a modulus between 15,000 and 70,000 psi. In fact, neither Cavallaro nor Sullivan discloses the modulus for any inner cover layer material, let alone the modulus for a high acid ionomer of an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claim 47 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 47 is respectfully requested.

2. Claims 48, 49, 58 and 59

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 48, 49, 58, and 59 are patentable for at least the same reasons as claim 12. In addition, claims 48 and 49 recite the thickness of the inner cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. Claims 58 and 59 recite the thickness of the outer cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. While Cavallaro discloses two ranges for an inner cover layer and two ranges for an outer cover layer, Cavallaro nevertheless fails to indicate the inner and outer cover layer thicknesses for a golf ball having a 1.68 inch diameter or a 1.72 inch diameter.

Accordingly, the Patent Owner respectfully submits that dependent claims 48, 49, 58, and 59 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 48, 49, 58, and 59 is respectfully requested.

3. Claims 50, 51, and 60-63

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 50, 51, and 60-63 are patentable for at least the same reasons as claim 12. In addition, claims 50 and 51 recite the Shore D hardness of the inner cover layer, while claims 60-63 recite the Shore D hardness of the outer cover layer. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf balls having an inner cover layer and an outer cover layer, with the recited Shore D hardness. In fact, neither Cavallaro nor Sullivan discloses the Shore D hardness of an inner cover layer or an outer cover layer formed about an inner cover layer, let

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alone an inner cover layer or outer cover layer that is part of a presently claimed dual-core golf ball.

Accordingly, the Patent Owner respectfully submits that dependent claims 50, 51, and 60-63 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 50, 51, and 60-63 is respectfully requested.

4. Claims 52, 53, 66, 67, 75, and 76

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 52, 53, 66, 67, 75, and 76 are patentable for at least the same reasons as claim 12. In addition, claims 52 and 53 recite the PGA compression for an inner ball formed by the dual core and inner cover layer, while claims 66 and 67 recite the PGA compression for the dual core. Claims 75 and 76 recite the PGA compression for the golf ball. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the PGA compression for an inner ball, a dual core, or a finished golf ball having a dual core, inner cover layer, and outer cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 52, 53, 66, 67, 75, and 76 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 52, 53, 66, 67, 75, and 76 is respectfully requested.

5. Claim 54

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claim 54 is patentable for at least the same reasons as claim 12. In addition, claim 54 recites that the inner cover layer is a blend of two or more of high acid ionomers. Neither Cavallaro nor Sullivan discloses an inner cover layer that consists essentially of a blend of two or more of high acid ionomers, let alone the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer that consists essentially of a blend of two or more of high acid ionomers.

Accordingly, the Patent Owner respectfully submits that dependent claim 54 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 54 is respectfully requested.

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6. Claim 55

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claim 55 is patentable for at least the same reasons as claim 12. In addition, claim 55 recites that the outer cover layer comprises a polyurethane. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer, where the outer cover layer comprises a polyurethane and the inner cover layer consists essentially of a high acid ionomer.

Accordingly, the Patent Owner respectfully submits that dependent claim 55 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 55 is respectfully requested.

7. Claims 56 and 57

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 56 and 57 are patentable for at least the same reasons as claim 12. In addition, claim 56 recites that the outer cover layer comprises a polyester elastomer or a polyester amide, while claim 57 recites that the outer cover layer comprises a blend of two or more non-ionomeric elastomers. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer, where the outer cover layer comprises a polyester elastomer, a polyester amide, or a blend of two or more non-ionomeric elastomers and the inner cover layer consists essentially of a high acid ionomer.

Accordingly, the Patent Owner respectfully submits that dependent claims 56 and 57 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 56 and 57 is respectfully requested.

8. Claims 64, 65, and 68-72

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 64, 65, and 68-72 are patentable for at least the same reasons as claim 12. In addition, claims 64, 65, and 68-69 recite additional limitations to the

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dual core, while claims 70-72 recite additional limitations to the center component. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having these additional limitations. For example, the only dual-core golf ball discussed outside the background section of Cavallaro is a wound core golf ball, which is not a solid dual-core golf ball. Likewise, both Cavallaro and Sullivan are silent with respect to the coefficient of restitution and the weight of a dual core. Moreover, Cavallaro teaches center component dimensions and hardness values that are substantially different from those recited in claims 70-72. In particular, while claims 70 and 71 require that the diameter of the center component be 0.854 inches or less or between 0.831 inches and 0.854 inches, respectively, Cavallaro discloses that the diameter of the center core is about 1.0 to about 1.2 inches for a conventional wound core¹² and the diameter of the core of a Cavallaro golf ball is about 1.25 to about 1.51 inches.¹³ Moreover, while claim 72 requires that the center component has a Shore D hardness of 75 or more, Cavallaro discloses that the core has a Shore D hardness of about 30 to about 65.¹⁴

Accordingly, the Patent Owner respectfully submits that dependent claims 64, 65, and 68-72 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 64, 65, and 68-72 is respectfully requested.

9. Claims 73, 74, and 77-79

As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, dependent claims 73, 74, and 77-79 are patentable for at least the same reasons as claim 12. In addition, claims 73 and 74 recite the coefficient of restitution of the claimed golf balls, while claims 77-79 recite the scuff resistance of the claimed golf balls. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the coefficient of restitution or the scuff resistance for a dual-core golf ball having the recited outer cover layer formed about the recited inner cover layer. The coefficient of restitution and cut resistance values presented in Sullivan are for single solid core golf balls having a single

¹² Col. 5, lines 55-56 of Cavallaro.

¹³ Col. 7, lines 39-40 of Cavallaro. We note that this dimension is presumably for a one-piece core.

¹⁴ Col. 8, line 30 of Cavallaro.

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cover layer, not dual-core golf balls having an outer cover layer formed about an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 64, 65, and 68-72 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 73, 74, and 77-79 is respectfully requested.

D. New Claims 120-156 are Patentable Over Cavallaro Alone and Cavallaro in Combination with Sullivan

1. Claim 120

New independent claim 120 is identical to original claim 12 with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf balls to four-piece golf balls. As explained above, the Cavallaro reference does not render independent claim 12 obvious. Thus, independent claim 120 is patentable for at least the same reasons as claim 12.

In addition, limiting claim 120 to the recited four-piece golf ball further differentiates the claimed golf balls from Cavallaro's golf balls. For example, new claim 120 is limited to a four-piece golf ball that consists of the recited dual core and the recited inner and outer cover layers. As such, the claimed golf ball can not have a mantle layer located between the recited dual core and the recited inner and outer cover layers. At no point does Cavallaro teach, suggest, or provide any rationale that would lead a person having ordinary skill in the art to make a golf ball lacking a mantle layer. To the contrary, Cavallaro's primary focus is a golf ball having a mantle layer located between a core and a cover layer. In fact, according to Cavallaro, the mantle layer is an important component for obtaining an optimal golf ball as indicated at column 8, lines 11-17:

it is preferable that the golf balls of the present invention have a mantle layer with a flexural modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention. Likewise, it is preferred that the mantle layer have a tensile modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention.

Thus, a person having ordinary skill in the art reading the Cavallaro reference would not have made a golf ball lacking a mantle layer.

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Accordingly, the Patent Owner respectfully submits that independent claim 120 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 120 is respectfully requested.

2. Claims 121-123

New dependent claims 121-123 are identical to dependent claims 13-15 with the exception that they depend from claim 120 as opposed to claim 12. As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 121-123 are patentable for at least the same reasons as claims 12 and 120. Prompt confirmation of patentability of claims 121-123 is respectfully requested.

3. Claim 124

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claim 124 is patentable for at least the same reasons as claims 12 and 120.

In addition, claim 124 recites that the modulus of the high acid ionomer of the inner cover layer is between 15,000 and 70,000 psi. At no point does Cavallaro or the combination of Cavallaro and Sullivan teach, suggest, or provide any rationale that a person having ordinary skill in the art should make the presently claimed dual-core golf ball having an outer cover layer formed about an inner cover layer consisting essentially of a high acid ionomer having a modulus between 15,000 and 70,000 psi. In fact, neither Cavallaro nor Sullivan discloses the modulus for any inner cover layer material, let alone the modulus for a high acid ionomer of an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claim 124 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 124 is respectfully requested.

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4. Claims 125, 126, 135, and 136

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 125, 126, 135, and 136 are patentable for at least the same reasons as claims 12 and 120.

In addition, claims 125 and 126 recite the thickness of the inner cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. Claims 135 and 136 recite the thickness of the outer cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. While Cavallaro discloses two ranges for an inner cover layer and two ranges for an outer cover layer, Cavallaro nevertheless fails to indicate the inner and outer cover layer thicknesses for a golf ball having a 1.68 inch diameter or a 1.72 inch diameter.

Accordingly, the Patent Owner respectfully submits that dependent claims 125, 126, 135, and 136 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 125, 126, 135, and 136 is respectfully requested.

5. Claims 127, 128, and 137-140

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 127, 128, and 137-140 are patentable for at least the same reasons as claims 12 and 120.

In addition, claims 127 and 128 recite the Shore D hardness of the inner cover layer, while claims 137-140 recite the Shore D hardness of the outer cover layer. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf balls having an inner cover layer and an outer cover layer, with the recited Shore D hardness. In fact, neither Cavallaro nor Sullivan discloses the Shore D hardness of an inner cover layer or an outer cover layer formed about an inner cover layer, let alone an inner cover layer or outer cover layer that is part of a presently claimed dual-core golf ball.

Accordingly, the Patent Owner respectfully submits that dependent claims 127, 128, and 137-140 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 127, 128, and 137-140 is respectfully requested.

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6. Claims 129, 130, 143, 144, 152, and 153

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 129, 130, 143, 144, 152, and 153 are patentable for at least the same reasons as claims 12 and 120.

In addition, claims 129 and 130 recite the PGA compression for an inner ball formed by the dual core and inner cover layer, while claims 143 and 144 recite the PGA compression for the dual core. Claims 152 and 153 recite the PGA compression for the golf ball. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the PGA compression for an inner ball, a dual core, or a finished golf ball having a dual core, inner cover layer, and outer cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 129, 130, 143, 144, 152, and 153 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 129, 130, 143, 144, 152, and 153 is respectfully requested.

7. Claim 131

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claim 131 is patentable for at least the same reasons as claims 12 and 120.

In addition, claim 131 recites that the inner cover layer is a blend of two or more of high acid ionomers. Neither Cavallaro nor Sullivan discloses an inner cover layer that consists essentially of a blend of two or more of high acid ionomers, let alone the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer that consists essentially of a blend of two or more of high acid ionomers.

Accordingly, the Patent Owner respectfully submits that dependent claim 131 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 131 is respectfully requested.

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8. Claim 132

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claim 132 is patentable for at least the same reasons as claims 12 and 120.

In addition, claim 132 recites that the outer cover layer comprises a polyurethane. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer, where the outer cover layer comprises a polyurethane and the inner cover layer consists essentially of a high acid ionomer.

Accordingly, the Patent Owner respectfully submits that dependent claim 132 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 132 is respectfully requested.

9. Claims 133 and 134

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 133 and 134 are patentable for at least the same reasons as claims 12 and 120.

In addition, claim 133 recites that the outer cover layer comprises a polyester elastomer or a polyester amide, while claim 134 recites that the outer cover layer comprises a blend of two or more non-ionomeric elastomers. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer, where the outer cover layer comprises a polyester elastomer, a polyester amide, or a blend of two or more non-ionomeric elastomers and the inner cover layer consists essentially of a high acid ionomer.

Accordingly, the Patent Owner respectfully submits that dependent claims 133 and 134 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 133 and 134 is respectfully requested.

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10. Claims 141, 142, and 145-149

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 141, 142, and 145-149 are patentable for at least the same reasons as claims 12 and 120.

In addition, claims 141, 142, and 145-146 recite additional limitations to the dual core, while claims 147-149 recite additional limitations to the center component. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having these additional limitations. For example, the only dual-core golf balls discussed outside the background section of Cavallaro is that of a wound core golf ball, which is not a solid dual-core golf ball. Likewise, both Cavallaro and Sullivan are silent with respect to the coefficient of restitution and the weight of a dual core. Moreover, Cavallaro teaches center component dimensions and hardness values that are substantially different from those recited in claims 147-149. In particular, while claims 147 and 148 require that the diameter of the center component be 0.854 inches or less or between 0.831 inches and 0.854 inches, respectively, Cavallaro discloses that the diameter of the center core is about 1.0 to about 1.2 inches for a conventional wound core¹⁵ and the diameter of the core of a Cavallaro golf ball is about 1.25 to about 1.51 inches.¹⁶ Moreover, while claim 149 requires that the center component has a Shore D hardness of 75 or more, Cavallaro discloses that the core has a Shore D hardness of about 30 to about 65.¹⁷

Accordingly, the Patent Owner respectfully submits that dependent claims 141, 142, and 145-149 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 141, 142, and 145-149 is respectfully requested.

11. Claims 150, 151, and 154-156

As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, dependent claims 150, 151, and 154-156 are patentable for at least the same reasons as claims 12 and 120.

¹⁵ Col. 5, lines 55-56 of Cavallaro.

¹⁶ Col. 7, lines 39-40 of Cavallaro. We note that this dimension is presumably for a core one piece core.

¹⁷ Col. 8, line 30 of Cavallaro.

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In addition, claims 150 and 151 recite the coefficient of restitution of the claimed golf balls, while claims 154-156 recite the scuff resistance of the claimed golf balls. At no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the coefficient of restitution or the scuff resistance for a dual-core golf ball having the recited outer cover layer formed about the recited inner cover layer. The coefficient of restitution and cut resistance values presented in Sullivan are for single solid core golf balls having a single cover layer, not dual-core golf balls having an outer cover layer formed about an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 150, 151, and 154-156 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 150, 151, and 154-156 is respectfully requested.

E. Claim 157 is patentable over Cavallaro Alone and Cavallaro in Combination with Sullivan

New independent claim 157 is identical to claim 120 with the exception that claim 157 recites a solid dual core and recites that the relatively soft polymeric material is polyurethane. As explained above, neither Cavallaro alone nor Cavallaro in combination with Sullivan renders independent claims 12 or 120 obvious. Thus, claim 157 is patentable for at least the same reasons as claims 12 and 120.

In addition, at no point does Cavallaro or the combination of Cavallaro and Sullivan disclose the presently claimed solid dual-core golf ball having a relatively soft outer cover layer formed about a harder inner cover layer, where the outer cover layer comprises a polyurethane and the inner cover layer consists essentially of a high acid ionomer.

Accordingly, the Patent Owner respectfully submits that dependent claim 157 is patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 157 is respectfully requested.

F. Claims 12 and 13 are patentable over Proudfit in Combination with Kim

The Examiner rejected claims 12 and 13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Proudfit and Kim.

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A person having ordinary skill in the art reading Proudfit would not have modified Proudfit's golf balls to obtain the presently claimed golf balls for several reasons. First, Proudfit discloses making three-component golf balls (i.e., golf balls having two cover layers formed over either a solid or wound core). Kim also discloses making three-component golf balls (i.e., golf balls having an inner core, an outer layer, and a cover). According to Proudfit, a desirable feature of Proudfit's golf balls is the ease and less expense involved in manufacturing the golf balls. For example, column 11, lines 12-16 disclose how Proudfit's new technology eliminates various steps from the old procedures. Thus, from a manufacturing perspective, a person having ordinary skill in the art reading Proudfit would not have set out to make a more complicated golf ball having extra layers and extra manufacturing steps.

Second, from a performance perspective, there is no apparent need to modify Proudfit's golf balls as the Examiner contends. According to the Examiner, it would have been obvious to replace "the solid one piece core or wound core of Proudfit's golf ball with a dual core construction so as to provide for superior rebound characteristics and carry distance, while maintaining adequate spin rate as taught by Kim." This is not true. A person having ordinary skill in the art reading Proudfit would have appreciated that Proudfit's golf balls already provide the sound, feel, and spin characteristics of a balata cover, while additionally providing good cut resistance.¹⁸ Moreover, Proudfit's golf balls arguably have better flight test characteristics than Kim's golf balls. For example, when Proudfit's golf balls were compared to a commercial wound core golf ball hit with a 9 degree driver, Proudfit's golf balls had a carry distance that was 3.5 yards longer than the commercial wound core golf ball.¹⁹ In contrast, when Kim's golf balls were compared to a wound core golf ball hit with a 9.5 degree driver, Kim's golf balls had a carry distance that was only about 1.3 to about 2.1 yards longer than the wound core golf ball.²⁰ Thus, a person having ordinary skill in the art reading Proudfit and somehow wishing to improve Proudfit's already improved golf balls certainly would not have incorporated the less effective configurations of Kim's golf balls.

¹⁸ Col. 5, lines 27-30 of Proudfit.

¹⁹ Table 12 of Proudfit.

²⁰ Table at columns 9 and 10. Comparative Example #4 is a thread wound golf ball.

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Accordingly, the Patent Owner respectfully submits that independent claim 12 is patentable over the combination of Proudfit and Kim. Dependent claim 13 is patentable for at least the same reasons as claim 12 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 12 and 13 is respectfully requested.

G. Claims 14 and 15 are Patentable over the Combination of Proudfit, Kim, and Sullivan

The Examiner rejected claims 14 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Proudfit, Kim, and Sullivan.

As explained above, the combination of Proudfit and Kim does not render independent claim 12 obvious. The addition of Sullivan provides no information that would have led a person having ordinary skill in the art to modify Proudfit's golf balls by incorporating the less effective configurations of Kim's golf balls into those of Proudfit's golf balls. Thus, dependent claims 14 and 15 are patentable for at least the same reasons as claim 12.

Accordingly, the Patent Owner respectfully submits that dependent claims 14 and 15 are patentable over the combination of Proudfit, Kim, and Sullivan. Prompt confirmation of patentability of claims 14 and 15 is respectfully requested.

H. Claims 12 and 13 are patentable over Nesbitt whether Combined with Horiuchi and Kim, Statz and Kim, or the Research Disclosure and Kim

The Examiner rejected claims 12 and 13 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nesbitt in combination with Horiuchi and Kim, over Nesbitt in combination with Statz and Kim, and over Nesbitt in combination with the Research Disclosure and Kim.

A person having ordinary skill in the art reading Nesbitt would not have modified Nesbitt's golf balls to obtain the presently claimed golf balls for several reasons. First, like Proudfit discussed above, Nesbitt discloses making three-component golf balls (i.e., golf balls having two cover layers formed over a core). Again, Kim also discloses making three-component golf balls (i.e., golf balls having an inner core, an outer layer, and a cover). According to Nesbitt, a further object or advantage of Nesbitt's invention is to provide

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"economies of manufacture." In other words, the ease and expense of a manufacturing process is an important consideration when designing and manufacturing golf balls, as confirmed from the teachings of Proudfit discussed above. Thus, from a manufacturing perspective, a person having ordinary skill in the art reading Nesbitt would not have set out to make a more complicated golf ball having extra layers and extra manufacturing steps.

Second, from a performance perspective, there is no apparent need to modify Nesbitt's golf balls as the Examiner contends. According to the Examiner, it would have been obvious to replace "the solid center or core (12) of Nesbitt's golf ball with a dual core construction so as to provide for superior rebound characteristics and carry distance, while maintaining adequate spin rate, as taught by Kim." This is not true. A person having ordinary skill in the art reading Nesbitt would have been advised that Nesbitt's golf balls already provide the "feel" and playing characteristics of a balata covered golf ball.²¹ Moreover, Nesbitt's golf balls arguably perform better than Kim's golf balls. For example, Nesbitt provides golf balls "in which the coefficient of restitution of the golf ball closely approaches or attains that which provides the maximum initial velocity permitted by the United States Golf Association Rules of two hundred fifty feet per second"²² In contrast, the maximum velocity reported for Kim's golf balls is 235.76 feet per second,²³ which is far less than the 255 feet per second velocity attained by Nesbitt's golf balls. Thus, a person having ordinary skill in the art reading Nesbitt and somehow wishing to improve Nesbitt's already improved golf balls certainly would not have incorporated the less effective configurations of Kim's golf balls.

The addition of Horiuchi, Statz, or the Research Disclosure provides no information that would have led a person having ordinary skill in the art to modify Nesbitt's golf balls by incorporating the less effective configurations of Kim's golf balls into those of Nesbitt's golf balls.

Accordingly, the Patent Owner respectfully submits that independent claim 12 is patentable over Nesbitt whether combined with Horiuchi and Kim, Statz and Kim, or the Research Disclosure and Kim. Dependent claim 13 is patentable for at least the same reasons

²¹ Col. 1, lines 51-56 of Nesbitt.

²² Col. 1, line 65 to col. 2, line 9 of Nesbitt.

²³ Table 1 at col. 8 of Kim.

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as claim 12 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 12 and 13 is respectfully requested.

I. Claims 14 and 15 are Patentable over the Nesbitt whether Combined with Horiuchi, Kim, and Sullivan, Statz, Kim, and Sullivan, or the Research Disclosure, Kim, and Sullivan

The Examiner rejected claims 14 and 15 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nesbitt in combination with Horiuchi, Kim, and Sullivan, over Nesbitt in combination with Statz, Kim, and Sullivan, and over Nesbitt in combination with the Research Disclosure, Kim, and Sullivan.

As explained above, the combinations that include Nesbitt and Kim do not render independent claim 12 obvious. The addition of Sullivan to these combinations provides no information that would have led a person having ordinary skill in the art to modify Nesbitt's golf balls by incorporating the less effective configurations of Kim's golf balls into those of Nesbitt's golf balls. Thus, dependent claims 14 and 15 are patentable for at least the same reasons as claim 12.

Accordingly, the Patent Owner respectfully submits that dependent claims 14 and 15 are patentable over the cited combinations. Prompt confirmation of patentability of claims 14 and 15 is respectfully requested.

J. New Independent Claims 120 and 157 are Patentable Over the Combinations that Include Proudfit and Kim and the Combinations that Include Nesbitt and Kim

New independent claim 120 is identical to original claim 12 with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf balls to four-piece golf balls. New independent claim 157 is identical to claim 120 with the exception that claim 157 recites a solid dual core and recites that the relatively soft polymeric material is polyurethane. As explained above, the combinations that include Proudfit and Kim and the combinations that include Nesbitt and Kim do not render independent claim 12 obvious. Thus, independent claims 120 and 157 are patentable for at least the same reasons as claim 12. Prompt confirmation of patentability of claims 120 and 157 is respectfully requested.

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K. New Claims 47-79 and 121-156 are Patentable Over the Combinations that Include Proudfit and Kim and the Combinations that Include Nesbitt and Kim

As explained above, the combinations that include Proudfit and Kim and the combinations that include Nesbitt and Kim do not render independent claims 12 and 120 obvious. Thus, dependent claims 47-79 and 121-156 are patentable for at least the same reasons as claims 12 and 121 and for the additional inventive features recited in each dependent claim. For example, claims 50, 51, 127, and 128 recite the Shore D hardness of the inner cover layer, while claims 60-63 and 137-140 recite the Shore D hardness of the outer cover layer. At no point do the combinations of cited references teach, suggest, or provide any rationale for making the presently claimed dual-core golf balls having an inner cover layer and an outer cover layer, with the recited Shore D hardness.

Moreover, Kim teaches away from the golf balls recited in claims 70-72 and 147-149. Claims 70 and 147 recite that the diameter of the center component is 0.854 inches (about 22 mm) or less, while claims 71 and 148 recite that the diameter of the center component is between 0.831 and 0.854 inches (between about 21-22 mm). Kim teaches that the inner core is set to 23-35 mm and that an inner core diameter less than 23 mm adversely affects rebound characteristics. This is clearly explained at column 2, lines 41-45 as follows:

The diameter of the inner core of the golf ball according to the present invention is set to 23-35 mm. If the diameter of the inner core is less than 23 mm, the diameter of the soft outer layer has to be increased and rebound characteristics are adversely affected.

Claims 72 and 149 recite that the center component has a Shore D hardness of 75 or more. Kim teaches that the Shore D hardness of the inner core is set to 30-62, and that an inner core Shore D hardness greater than 62 adversely affects the "feel" of the golf ball. This is clearly explained at column 2, lines 50-57 as follows:

The hardness (Shore D) of the inner core is preferably set in the range of 30-62. A inner core having a hardness (Shore D) less than 30 is too soft to give rebound characteristics necessary for reaching near the initial velocity limitation 250 ft/sec (+2% tolerance) required by U.S.G.A. and R. & A. If the hardness (Shore D) exceeds 62, the feeling of the ball is adversely affected.

Thus, Kim specifically teaches away from the subject matter recited in claims 70-72 and 147-149, providing additional support for the patentability of these claims.

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Accordingly, the Patent Owner respectfully submits that new dependent claims 47-79 and 121-156 are patentable over the cited combinations. Prompt confirmation of patentability of claims 47-79 and 121-156 is respectfully requested.

II. Claims 1-9, 16-46, and 80-119

A. Claims 1-9 are patentable over the Combination of Cavallaro and Sullivan

The Examiner rejected claims 1-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Cavallaro and Sullivan.

A person having ordinary skill in the art reading Cavallaro and Sullivan would have no reason to or rationale for making the presently claimed golf balls for several reasons. First, Cavallaro already provides golf balls with optimum performance characteristics including the “click and feel” of a conventional wound ball and the distance, durability, and relative ease of manufacturing of conventional two piece balls.²⁴ Thus, there is no apparent need to modify Cavallaro’s golf balls by looking to Sullivan.

Second, while Cavallaro discloses that any number of a wide variety of cover materials including balata and Surlyn® can be used in a Cavallaro golf ball,²⁵ it is the core and mantle layer properties that are specifically discussed as effecting play characteristics such as spin, initial velocity, and feel.²⁶ For example, column 8, lines 11-17 states that:

it is preferable that the golf balls of the present invention have a mantle layer with a flexural modulus of about 500 psi to about 50,000 psi in order to impart a softer “feel” to the golf balls of the present invention. Likewise, it is preferred that the mantle layer have a tensile modulus of about 500 psi to about 50,000 psi in order to impart a softer “feel” to the golf balls of the present invention.

Thus, a person having ordinary skill in the art reading Cavallaro would have appreciated that Cavallaro’s mantle layer is a golf ball component that is much more important for obtaining an optimal golf ball than is the cover, especially since various covers from balata to Surlyn® can be used. This is confirmed by the fact that Cavallaro only tested two golf balls having Cavallaro’s mantle layer, both of which have a softer “feel” and both of which have a

²⁴ Col. 3, lines 32-36 and lines 56-62 of Cavallaro.

²⁵ Col. 5, line 67 to Col. 6, line 48 of Cavallaro.

²⁶ Col. 7, line 29 to Col. 8, line 32 of Cavallaro.

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conventional single cover layer of Li/Na Surlyn® over the mantle layer.²⁷ Given that the cover material of Cavallaro's golf balls is largely irrelevant and, as indicated above, Cavallaro already purports to provide golf balls with optimum performance characteristics, there is no logical basis for substituting Sullivan's cover for Cavallaro's cover.

Third, assuming for the sake of argument that one would have been motivated to substitute Sullivan's cover for Cavallaro's cover (despite the absence of evidence supporting the desirability of any such substitution), such a substitution would not have resulted in the presently claimed golf balls. Claim 1 recites a golf ball that must have a dual core in combination with an inner cover layer and an outer cover layer. Sullivan discloses mixing hard and soft ionomers to obtain a golf ball cover. At no point does Sullivan disclose that Sullivan's cover is or can be the inner or outer layer of a cover. Sullivan simply discloses using a mixture of hard and soft ionomers as the sole cover of a golf ball. Thus, combining the Cavallaro and Sullivan references does not result in the presently claimed golf balls.

Accordingly, the Patent Owner respectfully submits that independent claim 1 is patentable over Cavallaro. Dependent claims 2-9 are patentable for at least the same reasons as claim 1 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 1-9 is respectfully requested.

B. Claim 80 is patentable over the Combination of Cavallaro and Sullivan

New independent claim 80 is identical to original claim 1 with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf balls to four-piece golf balls. As explained above, the combination of Cavallaro and Sullivan does not render independent claim 1 obvious. Thus, independent claim 80 is patentable for at least the same reasons as claim 1.

In addition, limiting claim 80 to the recited four-piece golf ball further differentiates the claimed golf balls from Cavallaro's golf balls. For example, new claim 80 is limited to a four-piece golf ball that consists of the recited dual core and the recited inner and outer cover layers. As such, the claimed golf ball can not have a mantle layer located between the recited dual core and the recited inner and outer cover layers. At no point does Cavallaro teach,

²⁷ Col. 9, lines 61-67 and Tables 2 and 3 of Cavallaro.

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suggest, or provide any rationale that would lead a person having ordinary skill in the art to make a golf ball lacking a mantle layer. To the contrary, Cavallaro's primary focus is a golf ball having a mantle layer located between a core and a cover layer. In fact, according to Cavallaro, the mantle layer is an important component for obtaining an optimal golf ball as indicated at column 8, lines 11-17:

it is preferable that the golf balls of the present invention have a mantle layer with a flexural modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention. Likewise, it is preferred that the mantle layer have a tensile modulus of about 500 psi to about 50,000 psi in order to impart a softer "feel" to the golf balls of the present invention.

Thus, a person having ordinary skill in the art reading the Cavallaro reference would not have made a golf ball lacking a mantle layer.

Accordingly, the Patent Owner respectfully submits that independent claim 80 is patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claim 80 is respectfully requested.

C. New Dependent Claims 16-46 and 81-119 are Patentable Over Cavallaro in Combination with Sullivan

1. Claims 81-88

New dependent claims 81-88 are identical to dependent claims 2-9 with the exception that they depend from claim 80 as opposed to claim 1. As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 81-88 are patentable for at least the same reasons as claims 1 and 80. Prompt confirmation of patentability of claims 81-88 is respectfully requested.

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2. Claims 16 and 89

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 16 and 89 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 16 and 89 recite that the modulus of the high acid ionomer of the inner layer is between 15,000 and 70,000 psi. At no point does the combination of Cavallaro and Sullivan teach, suggest, or provide any rationale that a person having ordinary skill in the art should make the presently claimed dual-core golf ball having an outer cover layer formed about an inner cover layer consisting essentially of a high acid ionomer having a modulus between 15,000 and 70,000 psi. In fact, neither Cavallaro nor Sullivan discloses the modulus for any inner cover layer material, let alone the modulus for a high acid ionomer of an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 16 and 89 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 16 and 89 is respectfully requested.

3. Claims 17, 18, 24, 25, 90, 91, 97, and 98

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 17, 18, 24, 25, 90, 91, 97, and 98 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 17, 18, 90, and 91 recite the thickness of the inner cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. Claims 24, 25, 97, and 98 recite the thickness of the outer cover layer for a golf ball having the recited 1.68 or 1.72 inches diameter. While Cavallaro discloses two ranges for an inner cover layer and two ranges for an outer cover layer, Cavallaro nevertheless fails to indicate the inner and outer cover layer thicknesses for a golf ball having a 1.68 inch diameter or a 1.72 inch diameter.

Accordingly, the Patent Owner respectfully submits that dependent claims 17, 18, 24, 25, 90, 91, 97, and 98 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 17, 18, 24, 25, 90, 91, 97, and 98 is respectfully requested.

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4. Claims 19, 20, 26-29, 92, 93, and 99-102

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 19, 20, 26-29, 92, 93, and 99-102 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 19, 20, 92, and 93 recite the Shore D hardness of the inner cover layer, while claims 26-29 and 99-102 recite the Shore D hardness of the outer cover layer. At no point does the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf balls having an inner cover layer and an outer cover layer, with the recited Shore D hardness. In fact, neither Cavallaro nor Sullivan discloses the Shore D hardness of an inner cover layer or an outer cover layer formed about an inner cover layer, let alone an inner cover layer or outer cover layer that is part of a presently claimed dual-core golf ball.

Accordingly, the Patent Owner respectfully submits that dependent claims 19, 20, 26-29, 92, 93, and 99-102 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 19, 20, 26-29, 92, 93, and 99-102 is respectfully requested.

5. Claims 21, 22, 33, 34, 42, 43, 94, 95, 106, 107, 115, and 116

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 21, 22, 33, 34, 42, 43, 94, 95, 106, 107, 115, and 116 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 21, 22, 94, and 95 recite the PGA compression for an inner ball formed by the dual core and inner cover layer, while claims 33, 34, 106, and 107 recite the PGA compression for the dual core. Claims 42, 43, 115, and 116 recite the PGA compression for the golf ball. At no point does the combination of Cavallaro and Sullivan disclose the PGA compression for an inner ball, a dual core, or a finished golf ball having a dual core, inner cover layer, and outer cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 21, 22, 33, 34, 42, 43, 94, 95, 106, 107, 115, and 116 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 21, 22, 33, 34, 42, 43, 94, 95, 106, 107, 115, and 116 is respectfully requested.

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6. Claims 23 and 96

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 23 and 96 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 23 and 96 recite that the inner cover layer is a blend of two or more of high acid ionomers. Neither Cavallaro nor Sullivan discloses an inner cover layer that consists essentially of a blend of two or more of high acid ionomers, let alone a dual-core golf ball having an inner cover layer that consists essentially of a blend of two or more of high acid ionomers.

Accordingly, the Patent Owner respectfully submits that dependent claims 23 and 96 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 23 and 96 is respectfully requested.

7. Claims 30 and 103

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 30 and 103 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 30 and 103 recite that the outer cover layer comprises a blend of hard and soft ionomers in the range of about 3 to 25 percent hard ionomer and about 75 to 97 percent soft ionomer. At no point does the combination of Cavallaro and Sullivan disclose a dual-core golf ball having an outer cover layer formed about an inner cover layer, where the outer cover layer comprises a blend of hard and soft ionomers with the recited percentages.

Accordingly, the Patent Owner respectfully submits that dependent claims 30 and 103 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 30 and 103 is respectfully requested.

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8. Claims 31, 32, 35-39, 104, 105, and 108-112

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 31, 32, 35-39, 104, 105, and 108-112 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 31, 32, 35, 36, 104, 105, 108, and 109 recite additional limitations to the dual core, while claims 37-39 and 110-112 recite additional limitations to the center component. At no point does the combination of Cavallaro and Sullivan disclose the presently claimed dual-core golf ball having these additional limitations. For example, the only dual-core golf balls discussed outside the background section of Cavallaro is that of a wound core golf ball, which is not a solid dual-core golf ball. Likewise, both Cavallaro and Sullivan are silent with respect to the coefficient of restitution and the weight of a dual core. Moreover, Cavallaro teaches center component dimensions and hardness values that are substantially different from those recited in claims 37-39 and 110-112. In particular, Cavallaro discloses that the diameter of the center core is about 1.0 to about 1.2 inches for a conventional wound core²⁸ and the diameter of the core of a Cavallaro golf ball is about 1.25 to about 1.51 inches.²⁹ Cavallaro also discloses that the core has a Shore D hardness of about 30 to about 65.³⁰

Accordingly, the Patent Owner respectfully submits that dependent claims 31, 32, 35-39, 104, 105, and 108-112 are patentable over Cavallaro alone and the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 31, 32, 35-39, 104, 105, and 108-112 is respectfully requested.

9. Claims 40, 41, 44-46, 113, 114, and 117-119

As explained above, the combination of Cavallaro and Sullivan does not render independent claims 1 or 80 obvious. Thus, dependent claims 40, 41, 44-46, 113, 114, and 117-119 are patentable for at least the same reasons as claims 1 and 80.

In addition, claims 40, 41, 113, and 114 recite the coefficient of restitution of the claimed golf balls, while claims 44-46 and 117-119 recite the scuff resistance of the claimed

²⁸ Col. 5, lines 55-56 of Cavallaro.

²⁹ Col. 7, lines 39-40 of Cavallaro. We note that this dimension is presumably for a one-piece core.

³⁰ Col. 8, line 30 of Cavallaro.

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golf balls. At no point does the combination of Cavallaro and Sullivan disclose the coefficient of restitution or the scuff resistance for a dual-core golf ball having the recited outer cover layer formed about the recited inner cover layer. The coefficient of restitution and cut resistance values presented in Sullivan are for single solid core golf balls having a single cover layer, not dual-core golf balls having an outer cover layer formed about an inner cover layer.

Accordingly, the Patent Owner respectfully submits that dependent claims 40, 41, 44-46, 113, 114, and 117-119 are patentable over the combination of Cavallaro and Sullivan. Prompt confirmation of patentability of claims 40, 41, 44-46, 113, 114, and 117-119 is respectfully requested.

D. Claims 1-6, 8, and 9 are patentable over the Combination of Proudfit, Kim, and Sullivan

The Examiner rejected claims 1-6, 8, and 9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over the combination of Proudfit, Kim, and Sullivan.

A person having ordinary skill in the art reading Proudfit would not have modified Proudfit's golf balls to obtain the presently claimed golf balls for several reasons. First, Proudfit discloses making three-component golf balls (i.e., golf balls having two cover layers formed over either a solid or wound core). Kim also discloses making three-component golf balls (i.e., golf balls having an inner core, an outer layer, and a cover). According to Proudfit, a desirable feature of Proudfit's golf balls is the ease and less expense involved in manufacturing the golf balls. For example, column 11, lines 12-16 disclose how Proudfit's new technology eliminates various steps from the old procedures. Thus, from a manufacturing perspective, a person having ordinary skill in the art reading Proudfit would not have set out to make a more complicated golf ball having extra layers and extra manufacturing steps.

Second, from a performance perspective, there is no need to modify Proudfit's golf balls as the Examiner contends. According to the Examiner, it would have been obvious to replace "the solid one piece core or wound core of Proudfit's golf ball with a dual core construction so as to provide for superior rebound characteristics and carry distance, while maintaining adequate spin rate as taught by Kim." This is not true. A person having

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ordinary skill in the art reading Proudfit would have been advised that Proudfit's golf balls already provide the sound, feel, and spin characteristics of a balata cover, while additionally providing good cut resistance.³¹ Moreover, Proudfit's golf balls arguably have better flight test characteristics than Kim's golf balls. For example, when Proudfit's golf balls were compared to a commercial wound core golf ball hit with a 9 degree driver, Proudfit's golf balls had a carry distance that was 3.5 yards longer than the commercial wound core golf ball.³² In contrast, when Kim's golf balls were compared to a wound core golf ball hit with a 9.5 degree driver, Kim's golf balls had a carry distance that was only about 1.3 to about 2.1 yards longer than the wound core golf ball.³³ Thus, a person having ordinary skill in the art reading Proudfit and somehow wishing to improve Proudfit's already improved golf balls certainly would not have incorporated the less effective configurations of Kim's golf balls.

Sullivan provides no additional information that would have led a person having ordinary skill in the art to modify Proudfit's golf balls by incorporating the less effective configurations of Kim's golf balls into those of Proudfit's golf balls.

Accordingly, the Patent Owner respectfully submits that independent claim 1 is patentable over the combination of Proudfit, Kim, and Sullivan. Dependent claims 2-6, 8, and 9 are patentable for at least the same reasons as claim 1 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 1-6, 8, and 9 is respectfully requested.

E. Claims 1-9 are patentable over Nesbitt whether Combined with Horiuchi, Kim, and Sullivan, Statz, Kim, and Sullivan, or the Research Disclosure, Kim, and Sullivan

The Examiner rejected claims 1-9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Nesbitt in combination with Horiuchi, Kim, and Sullivan, over Nesbitt in combination with Statz, Kim, and Sullivan, and over Nesbitt in combination with the Research Disclosure, Kim, and Sullivan.

A person having ordinary skill in the art reading Nesbitt would not have modified Nesbitt's golf balls to obtain the presently claimed golf balls for several reasons. First, like

³¹ Col. 5, lines 27-30 of Proudfit.

³² Table 12 of Proudfit.

³³ Table at columns 9 and 10. Comparative Example #4 is a thread wound golf ball.

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Proudfit discussed above, Nesbitt discloses making three-component golf balls (i.e., golf balls having two cover layers formed over a core). Again, Kim also discloses making three-component golf balls (i.e., golf balls having an inner core, an outer layer, and a cover). According to Nesbitt, a further object or advantage of Nesbitt's invention is to provide "economies of manufacture." In other words, the ease and expense of a manufacturing process is an important consideration when designing and manufacturing golf balls, as confirmed from the teachings of Proudfit discussed above. Thus, from a manufacturing perspective, a person having ordinary skill in the art reading Nesbitt would not have set out to make a more complicated golf ball having extra layers and extra manufacturing steps.

Second, from a performance perspective, there is no need to modify Nesbitt's golf balls as the Examiner contends. According to the Examiner, it would have been obvious to replace "the solid center or core (12) of Nesbitt's golf ball with a dual core construction so as to provide for superior rebound characteristics and carry distance, while maintaining adequate spin rate, as taught by Kim." This is not true. A person having ordinary skill in the art reading Nesbitt would have been advised that Nesbitt's golf balls already provide the "feel" and playing characteristics of a balata covered golf ball.³⁴ Moreover, Nesbitt's golf balls arguably perform better than Kim's golf balls. For example, Nesbitt provides golf balls "in which the coefficient of restitution of the golf ball closely approaches or attains that which provides the maximum initial velocity permitted by the United States Golf Association Rules of two hundred fifty feet per second"³⁵ In contrast, the maximum velocity reported for Kim's golf balls is 235.76 feet per second,³⁶ which is far less than the 250 feet per second velocity attained by Nesbitt's golf balls. Thus, a person having ordinary skill in the art reading Nesbitt and somehow wishing to improve Nesbitt's already improved golf balls certainly would not have incorporated the less effective configurations of Kim's golf balls.

The addition of Horiuchi, Statz, the Research Disclosure, and Sullivan provides no information that would have led a person having ordinary skill in the art to modify Nesbitt's

³⁴ Col. 1, lines 51-56 of Nesbitt.

³⁵ Col. 1, line 65 to col. 2, line 9 of Nesbitt.

³⁶ Table 1 at col. 8 of Kim.

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golf balls by incorporating the less effective configurations of Kim's golf balls into those of Nesbitt's golf balls.

Accordingly, the Patent Owner respectfully submits that independent claim 1 is patentable over Nesbitt whether combined with Horiuchi, Kim, and Sullivan, Statz, Kim, and Sullivan, or the Research Disclosure, Kim, and Sullivan. Dependent claims 2-9 are patentable for at least the same reasons as claim 1 and for the additional inventive features described therein. Prompt confirmation of patentability of claims 1-9 is respectfully requested.

F. New Independent Claim 80 is Patentable Over the Combinations that Include Proudfit and Kim and the Combinations that Include Nesbitt and Kim

New independent claim 80 is identical to original claim 1 with the exception that the first two recitations of the transitional phrase "comprising" were replaced with "consisting of" to limit the recited golf balls to four-piece golf balls. As explained above, the combinations that include Proudfit and Kim and the combinations that include Nesbitt and Kim do not render independent claim 1 obvious. Thus, independent claim 80 is patentable for at least the same reasons as claim 1. Prompt confirmation of patentability of claim 80 is respectfully requested.

G. New Dependent Claims 16-46 and 81-119 are Patentable Over the Combinations that Include Proudfit and Kim and the Combinations that Include Nesbitt and Kim

As explained above, the combinations that include Proudfit and Kim and the combinations that include Nesbitt and Kim do not render independent claims 1 and 80 obvious. Thus, dependent claims 16-46 and 81-119 are patentable for at least the same reasons as claims 1 and 80 and for the additional inventive features recited in each dependent claim. For example, claims 19, 20, 92, and 93 recite the Shore D hardness of the inner cover layer, while claims 26-29 and 99-102 recite the Shore D hardness of the outer cover layer. At no point do the combinations of cited references teach, suggest, or provide any rationale for making the presently claimed dual-core golf balls having an inner cover layer and an outer cover layer, with the recited Shore D hardness.

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Moreover, Kim teaches away from the golf balls recited in claims 37-39 and 110-112. Claims 37 and 110 recite that the diameter of the center component is 0.854 inches (about 22 mm) or less, while claims 38 and 111 recite that the diameter of the center component is between 0.831 and 0.854 inches (between about 21-22 mm). Kim teaches that the inner core is set to 23-35 mm and that an inner core diameter less than 23 mm adversely affects rebound characteristics. This is clearly explained at column 2, lines 41-45 as follows:

The diameter of the inner core of the golf ball according to the present invention is set to 23-35 mm. If the diameter of the inner core is less than 23 mm, the diameter of the soft outer layer has to be increased and rebound characteristics are adversely affected.

Claims 39 and 112 recite that the center component has a Shore D hardness of 75 or more. Kim teaches that the Shore D hardness of the inner core is set to 30-62, and that an inner core Shore D hardness greater than 62 adversely affects the "feel" of the golf ball. This is clearly explained at column 2, lines 50-57 as follows:

The hardness (Shore D) of the inner core is preferably set in the range of 30-62. A inner core having a hardness (Shore D) less than 30 is too soft to give rebound characteristics necessary for reaching near the initial velocity limitation 250 ft/sec (+2% tolerance) required by U.S.G.A. and R. & A. If the hardness (Shore D) exceeds 62, the feeling of the ball is adversely affected.

Thus, Kim specifically teaches away from the subject matter recited in claims 37-39 and 110-112, providing additional support for the patentability of these claims.

Accordingly, the Patent Owner respectfully submits that new dependent claims 16-46 and 81-119 are patentable over the cited combinations. Prompt confirmation of patentability of claims 16-46 and 81-119 is respectfully requested.

III. Request for Reconsideration

The Patent Owner submits that claims 1-9 and 12-157 are patentable over the cited references. Reconsideration and allowance is respectfully requested. The Patent Owner invites suggestions from the Examiner in the event that any issue would delay the prompt confirmation of patentability of one or more of the pending claims.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue, or comment does not signify agreement with or concession of that rejection, issue, or comment. In addition, because the arguments made

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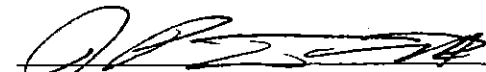
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above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Nothing in this paper should be construed as a concession of any issue except as specifically stated herein, and the claim cancellations herein do not signify concession of unpatentability of claims 10 and 11. The Patent Office should infer no (i) adoption of a position with respect to patentability, (ii) change in the Patent Owner's position with respect to any claim or subject matter of the invention, or (iii) acquiescence to any position expressed in the Office Action, based on the amendments made herein.

Please charge deposit account 06-1050 in the amount of \$7460 for excess claim fees. No other fees are believed to be due at this time. If necessary, please apply any other charges to deposit account 06-1050.

Respectfully submitted,

Date: July 15, 2009


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